

#### ABSTRACT OF THE DISCLOSURE

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A multiple-mode memory includes a three-dimensional array of word lines, bit lines and memory cells. The memory cells are arranged in multiple vertically stacked layers. In some layers the memory cells are implemented as field-programmable write-once memory cells, and in other layers the memory cells are implemented as field-programmable re-writable memory cells. In this way, both re-writability and permanent data storage are provided in an inexpensive, single-chip solution. Additional types and numbers of types of memory cells can be used.

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